

In the Claims

Applicant has submitted a complete claim set. This claim set shows the present amendments and the claims are presented as re-numbered by the Examiner in the Office Action dated October 3rd, 2002.

1-21. (Canceled)

22. (Currently Amended) A method for stimulating an immune response in a subject, comprising:

administering to a subject exposed to an antigen an effective amount for inducing a synergistic antigen specific immune response of an immunopotentiating cytokine selected from the group consisting of IL-3, ~~IL-5~~ and IL-12, and an immunostimulatory CpG oligonucleotide having a sequence including at least the following formula:

5' X₁CGX₂ 3'

wherein the oligonucleotide includes at least 8 nucleotides wherein C is unmethylated and wherein X₁ and X₂ are nucleotides, wherein the cytokine is a peptide, whereby an antigen is optionally additionally administered, and wherein the antigen and the CpG oligonucleotide are not conjugated.

23. (Previously Presented) The method of claim 22, wherein the immunopotentiating cytokine is an antigen-cytokine fusion protein.

24. (Previously Presented) The method of claim 22, wherein the antigen is selected from the group consisting of a tumor antigen, a microbial antigen, and an allergen.

25. (Previously Presented) The method of claim 24, wherein the antigen is a tumor antigen.

26. (Previously Presented) The method of claim 22, wherein the antigen is administered to the subject in conjunction with the immunostimulatory CpG oligonucleotide and the immunopotentiating cytokine.

27. (Previously Presented) The method of claim 22, wherein the subject is passively exposed to the antigen.

28. (Previously Presented) The method of claim 22, wherein the subject has a neoplastic disorder.

29. (Previously Presented) The method of claim 22, wherein the subject has a viral infection.

30. (Previously Presented) The method of claim 22, wherein the subject is a non-human animal.

31. (Previously Presented) The method of claim 30, wherein the non-human animal is a vertebrate animal selected from the group consisting of a dog, a cat, a horse, a cow, a pig, a sheep, a goat, a chicken, and a primate.

32. (Currently Amended) A composition, comprising:
an effective amount for synergistically activating a dendritic cell of an immunostimulatory CpG oligonucleotide having a sequence including at least the following formula:

5' X₁CGX₂ 3'

wherein the oligonucleotide includes at least 8 nucleotides wherein C is unmethylated and wherein X₁ and X₂ are nucleotides; and a cytokine selected from the group consisting of IL-3[,] IL-5 and IL-12, wherein the cytokine is a peptide.

33. (Previously Presented) The composition of claim 32, wherein the cytokine is IL-3.

34. (Previously Presented) The composition of claim 32, further comprising an antigen and wherein the antigen and the CpG oligonucleotide are not conjugated.

35. (Previously Presented) The composition of claim 34, wherein the antigen is selected from the group consisting of a cancer antigen, a microbial antigen, and an allergen.

36. (Currently Amended) A method for activating a dendritic cell, comprising:
contacting a dendritic cell exposed to an antigen with an effective amount for synergistically activating a dendritic cell of an immunopotentiating cytokine selected from the group consisting of IL-3, IL-5 and IL-12, and an immunostimulatory CpG oligonucleotide having a sequence including at least the following formula:



wherein the oligonucleotide includes at least 8 nucleotides wherein C is unmethylated and wherein X_1 and X_2 are nucleotides, wherein the cytokine is a peptide, whereby an antigen is optionally additionally administered, and wherein the antigen and the CpG oligonucleotide are not conjugated.

37. (Previously Presented) The method of claim 36, wherein the antigen is a tumor antigen.

38. (Currently Amended) A method for treating a subject having a neoplastic disorder, comprising:

administering to the tumor of a subject having a neoplastic disorder an immunopotentiating cytokine selected from the group consisting of IL-3, IL-5 and IL-12, and an immunostimulatory CpG oligonucleotide having a sequence including at least the following formula:



wherein the oligonucleotide includes at least 8 nucleotides wherein C is unmethylated and wherein X_1 and X_2 are nucleotides, in an amount effective for synergistically increasing survival time of the subject with respect to a subject administered the immunostimulatory CpG oligonucleotide or the immunopotentiating cytokine alone, wherein the cytokine is a peptide.

39. (Previously Presented) The method of claim 38, wherein the tumor is selected from the group consisting of a lymphoma and a tumor of the brain, lung, ovary, breast, prostate, colon, and skin.

40. (Previously Presented) The method of claim 38, wherein the immunostimulatory CpG oligonucleotide and the immunopotentiating cytokine are injected directly into the tumor.

41. (Previously Presented) The method of claim 38, wherein the subject is a non-human animal.

42. (Previously Presented) The method of claim 41, wherein the non-human animal is a vertebrate animal selected from the group consisting of a dog, a cat, a horse, a cow, a pig, a sheep, a goat, a chicken, and a primate.

43. (Previously Presented) The method of claim 42, wherein the tumor is selected from the group consisting of lymphoma and a tumor of the brain, lung, ovary, breast, prostate, colon, and skin.